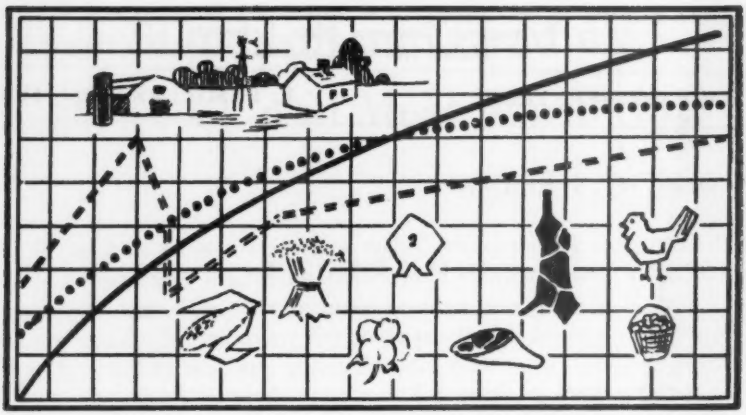
Oklahoma Current Farm Economics



SPECIAL REPORT

The Role of Grade Standards and Grading In Livestock and Meat Marketing

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The Role of Grade Standards and Grading In Livestock and Meat Marketing

Willard F. Williams*

No topic is more controversial today among people concerned with livestock and meat marketing than grade standards and grading. As evidence of this, a two-day meeting recently was held in Kansas City which was attended by about 250 cattle producers, feeders, packers, government officials, retailers, educators and others for the sole purpose of discussing the U.S. grade standards for beef. In such controversies, which usually are concerned with immediate problems and objectives, sight of longer term considerations and of basic underlying economic goals and objectives often is lost. The aim of this article, therefore, is to point out and analyze the basic economic objectives of grade standards for livestock and meat. Some space also is devoted to the question of the kind of a grade system that is required if intended economic objectives are to be attained. Criteria for determining whether or not the grade system is adequate are considered.

Basic Economic Objectives

Producers as well as marketing firms are interested in marketing primarily because they are interested in promoting marketing efficiency. The same is true of their interest in grade standards and grading. Those who promote grading usually do so because they see this as one means of promoting marketing efficiency.

There are two basic types of efficiency in marketing. One is called operating or *"operational efficiency"*. This type, with which all are familiar, is concerned with the operating costs of performing specific marketing functions. A marketing system is operationally efficient if

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costs of performing each particular marketing function are reduced to a minimum. The other type sometimes is called *"pricing efficiency"*. Although some effort may be required to think of prices and pricing in terms of efficiency, it, nevertheless, can be done. Pricing efficiency is concerned with the accuracy and speed with which prices are established and reflected through the marketing system from consumer to producer or from one point in the system to another. We have an efficient pricing system when accurate prices are established and distributed quickly and accurately to everyone concerned at relatively low cost. Operational efficiency and pricing efficiency are of equal importance in marketing.

The principal objective of grade standards and grading, then, is to improve operational efficiency, pricing efficiency, or both. On the basis of logic, observation, and limited empirical information, it appears that the official carcass grade standards for beef, calf and lamb have affected both of these efficiency types. Despite the perennial controversy, and this is a curious fact, there seems to be some general agreement that the official grade standards have had a beneficial effect, generally, on both operational and pricing efficiency.

Effects on Operational Efficiency

Theoretically and in actual practice, according to many writers, standardized grading of meat has a beneficial effect on operational efficiency by tending to reduce marketing costs. This is done by:

1. Increasing the extent of buying and selling by description.
2. Eliminating time and expense associated with arguments regarding quality.
3. Increasing the market potential of suppliers previously operating on a local or regional basis and permitting them to sell most advantageously in a national market.
4. Widening the procurement territory of large-volume wholesalers and retailers and permitting them to buy most advantageously from among a larger number of suppliers.
5. Encouraging specialization among suppliers by function and type of product handled and type of outlet.
6. Reducing the pressure among suppliers for large expenditures on competitive brand advertising.

7. Affecting the location of the processing industry by encouraging the shift of functions such as slaughtering and packing from areas of primary consumption to areas of concentrated production and thereby eliminating the necessity of shipping hides, horns and waste products to markets where only the meat is needed.

8. Increasing the emphasis upon technological innovation, improved marketing practices, and other means of reducing costs through intensifying competition on a price basis.

All of these forces theoretically tend to have a downward effect on marketing costs and a beneficial effect on efficiency. And in observing the industry these affects can be recognized readily. The extent of buying on description and specification has increased; distribution territories of packers and procurement territories of large-volume buyers have widened; slaughter and processing are shifting to the areas of concentrated production; the industry is becoming increasingly specialized, etc. Grading, of course, is not entirely responsible. It may not even be primarily responsible. But there are good indications that the official uniform grades and grading are partly responsible.

With reductions in marketing costs, the total revenue received by producers presumably is increased. This is accomplished either directly by increasing prices received by producers or indirectly through lower prices to consumers which tends to increase the volume of product that producers can sell at specified prices.

Effects on Pricing Efficiency

There also seems to be some general agreement that, theoretically and in fact, the Federal grade standards for livestock and meat improve pricing efficiency. This is accomplished by:

1. Providing a universal and generally accepted language by which variations in attributes of quality and in prices can be interpreted.

2. Facilitating the collection of accurate information on demand, supplies available, and prices.

3. Facilitating the dissemination of pricing information in a meaningful, understandable and useful form.

4. Improving accuracy in the process of price formation itself by increasing the intensity of competition on a price basis.

Most everyone who has spent much time thinking about grades and grading agree that these are worthwhile aims. They agree because there are some rather good reasons for thinking that the pricing system and the marketing system generally function more efficiently when we (1) increase the general knowledge of everyone in the trade regarding the attributes and value of the product being traded, and (2) tend to equalize that knowledge among all buyers and sellers in the trade.

Structural Effects of Grading

Since the principal objective of grade standards and grading is to improve operational and pricing efficiency in marketing and since there seems to be little reason to think that these objectives have not been attained, at least in part, why the controversy? One of the reasons is that grades and grading affect the organization or structure of an industry as well as its efficiency.

Grading has been responsible, or partly responsible, for changes; and when changes take place someone is helped and someone is hurt—sometimes badly. By shifting the location of slaughtering and processing from consumption areas to areas of production, processors and slaughterers in the consumption areas are hurt. By making it possible for chains and other large-volume handlers to buy at a distance—actually most any place in the nation—local packers and processors sometimes are hurt. By intensifying competition they have tended to force the more inefficient operators either to become more efficient or go out of business.

The carcass grades have seriously deteriorated the value to packers of their brand names and have tended to shift competitive power from the large brand-name packers to the medium-volume and specialized independent packers. This is not a matter of pennies to the brand-name packers. It has meant literally millions of dollars in lost sales to these packers and contributed to changes in their entire mode of operation.

There are various other structural effects of the grade standards for livestock and meat that could be mentioned and discussed if time permitted. For instance, these grade standards probably are partly responsible for sharp reductions in numbers of non-slaughtering packing-house branches operated by the large brand-name packers. They also may be partly responsible for some shift by many of these packers to pork and to production of processed meat items. Furthermore, they may have contributed to the shift of competitive bargaining power from the packers to the large-volume retailers.

Whether these effects are considered "good" or "bad", the fact remains that many, perhaps most, of the structural changes were necessary to attain the primary objective for which the standards were established—that of improving operational and pricing efficiency. Improvements and changes always are made at some cost. Substantial improvements in the efficiency of distributing and pricing livestock and meat would not have been possible without at least some structural adjustments. In fact, the grade standards appear to have facilitated structural adjustments that in any event would eventually have been necessary. In one sense, therefore, evidence of controversy in the trade regarding grades and grading also is evidence that the standards have been effective — that they actually have tended to improve efficiency in marketing.

Economic Criteria for Evaluating Grading Standards

There are other important reasons for controversy within the industry and among professional ranks regarding grade standards for livestock and meat. Part of it stems from lack of definitive information on the physical attributes of meat, the sensory characteristics of consumers, and what is meant by "quality". This has led to differences in implicit assumptions regarding the nature of quality in meat and the manner in which one grade should be related to another. Lack of good information also has led to differences in ideas regarding the kind of grading system that is required to attain stated objectives.

Effects of Variations in Basic Assumptions

Most statements on quality in meat and grading assume implicitly that any grading system should tell consumers which grade or quality is "best", which "second best", which "third best", etc. When, in this sense, grades are considered as vertically oriented, it must also be assumed that quality can be described as a single continuous variable running from some presumed "low" level of quality to some presumed "high" level. In addition, it must be assumed that everyone agrees on the definitions of "high" and "low"; that the "highest" quality is best for all people and all uses.

With this type of vertical orientation, the industry and industry analysts become much concerned with results of consumer preference studies indicating that (1) some but not all consumers preferred the "highest" grade, or that (2) the one of the lower grades received the most consumer votes. It is concluded that grades are not "oriented to consumer preferences." Packers and others who unconsciously assume

that grades are or should be vertically oriented and note that choice is "too fat" for some consumers arrive at the same conclusion. With a vertical orientation there is an inclination to talk about "optimum" levels of fat, "optimum tenderness," etc.

Another set of assumptions, however, could easily and, perhaps more realistically, be adopted. It could be assumed, for instance, that grades should tell consumers and the trade only that the quality represented by one grade is *different,* rather than better or worse, than the quality represented by another grade. With this type of an orientation which might be termed "horizontal", it would not be necessary to assume that quality is a single continuous variable, or that value systems of consumers are similar. Producers and marketing firms would not necessarily be disturbed when preference studies indicated that most consumers preferred "Standard" or "Commercial", or some other grade. They would not tend to be upset when they heard people say that "choice is too fat" for some consumers. They no longer would be particularly concerned about "optimum" fat, "optimum" tenderness, etc. Instead, they simply would point out that grades are indicators of quality differences, not levels, and that if for any reason one grade was unsatisfactory another should be tried.

The horizontal orientation does lead, however, to concern regarding grade names. If the grades are to be represented simply as "different", neutral grade names that do not imply that one grade is "better" than another should be adopted. This might be extremely difficult to achieve. Nearly any conceivable set of grade names eventually might become ordered in terms of "best", "second best", etc. There is little reason to think, however, that the development of neutral grade names is an impossibly difficult task. An effort in this direction, at least, might be made.

The Basic Problem in Establishing Grade Standards

The establishment of grade standards for any commodity is essentially a problem of classification. Any system of classification necessarily is a compromise. It is a compromise between (1) minimizing the variation within each grade or class and thereby increasing the usefulness of the system, and (2) minimizing the cost in terms of time, effort, or dollars required in making and maintaining the segregation.

Every office file clerk, for instance, has found that the optimum filing system for any office is a compromise. She wants to set up as many classifications as possible in order to reduce the variety of material in each folder to a minimum. The ideal in this regard would be to have a

different folder for each separate paper or piece of material in the office. She realizes, however, that this could mean having so many different folders and classifications that the entire system would be unmanageable as well as extremely time consuming and costly to maintain. Accordingly, if a system is set up such that there is some variation in the material within each folder and some cross-classifications, the system is a useful guide to desired reference material and, at the same time, not too costly to maintain. Any filing classification will be better than no filing system whatever if it results in a net saving in time and cost, i.e., if the usefulness of the system outweighs the associated direct and indirect costs of setting up the system and maintaining it. The optimum or "best" system will be that system which in these terms maximizes the net saving.

Carrying the illustration further, can it be said that any one file or folder was of more value than another or of "highest" value? For any particular person or for one particular use the answer, possibly, is "yes". In preparing correspondence the letter file might be of greatest value or use. At another time the invoices might be preferred and be of greatest value. In an overall sense, however, it cannot be said that any one file or folder is "preferred" or of highest value.

Although this is a highly simplified illustration of the grading problem, it reveals principles and considerations often forgotten in considering grades for livestock and meat. The present Prime grade of beef finds its highest valued use in the restaurant trade. Prime would not be considered for sausage material by many firms even if it were available at a substantial discount relative to conventional sausage materials. Each of the other grades have their specific uses. Similarly, some people, depending upon their experience with meat and intended use, might prefer one grade while another person might prefer another grade. This does not mean, necessarily, that the grades are not "oriented to consumers taste preferences." A family might prefer choice sirloin steak for Sunday dinner, and at the same time, prefer a Good grade roast for a week day meal.

A grading system, therefore, can be a useful guide to selection even though there are no consistent or systematic differences in price between grades. Once the grade lines are fixed, the variation in supply-demand relationships for one grade relative to supply-demand relationships for another grade will determine the price differentials between them. The principal reason why the present Choice grade of beef consistently is higher than the price of Good grade beef is not because more people prefer choice. It is because Choice costs more to produce and this tends to limit the supply of Choice relative to the demand for this grade more than is true for the Good grade. If the grades for beef were set

up such that no one of the grades cost more to produce than another there would be no particular reason why one grade should be *consistently* higher or lower in price than another. Although it is unlikely that such a system could be devised, it serves to illustrate the fact that grades do not determine prices. Grade systems simply are classifications through which desires or preferences can be expressed more accurately and efficiently.

The basic questions facing producers and marketers of beef in considering grade standards are three: (1) Are the present grade standards better than no standards whatever, i.e., do they result in a net saving in marketing costs; (2) what is the optimum system; and (3) how can the present standards be improved, i.e., moved toward the optimum? These questions cannot be answered definitely without more research information than currently is available. Some important considerations, however, can be set forth.

Each of two sets of requirements can be considered. One set consists of the "minimum" economic requirements for grading. These are the criteria that if met by the existing system will mean that this system is better than no grading whatever. The other consists of requirements for an "optimum" system, i.e., not necessarily the "ideal" but the "best" that under existing circumstances can be obtained.

The Minimum Requirements

There are three principal minimum economic criteria for grading. These are:

1. The grading system must significantly reduce the variation in basic quality attributes within at least some of the grades. That is, the variation in at least some of the grades must be significantly smaller than the variation in the entire population of the product.

2. The grading system must reflect some significant differences between at least some of the grades in basic physical quality attributes. This does not mean (a) that there will not be some overlaping among the grades in quality attributes, or (b) that the grades should differ significantly or at all in *value* to consumers. It simply ensures that two or more grades will not include precisely the same range or combination of basic physical attributes.

3. The grading system must result in at least some net social gain. It must provide enough increase in satisfaction or utility to consumers or marketing firms to more than offset the increase, if any, in direct and indirect costs associated with grading. The net increase in satisfaction or utility can be provided in either of two ways. Grades could increase the value of the product to consumers sufficiently that they are willing to increase the prices they pay for the product without reducing their total consumption. Alternatively, grades could result in net reductions in marketing costs.

Almost any conceivable division of a product on the basis of known quality attributes would satisfy the requirements of the first two criteria. Suppose processing beef were separated from block beef by grades. This would satisfy the first two criteria. The variation in quality attributes of block beef probably is smaller than the combined variation in the total of block and processing beef. In addition, the two differ significantly in the range and combinations of attributes that would be considered. The third criterion, however, would not be satisfied unless it can be shown that (1) the two grades are useful in buying and selling beef, and (2) they are sufficiently useful that they result in net cost savings. These two grades probably would fail this test because buyers and sellers can recognize each type readily—they can distinguish quickly and accurately without aid between block and processing beef.

The present Federal carcass grade standards for beef, it appears, probably do not meet all three of these minimum requirements. Variation in quality within each of the grades probably is less than variation in the entire population of the product. The grades seem to differ significantly in basic physical attributes. In addition, reductions in marketing costs, described earlier, and revenue increases that can be attributed to grading, it appears, greatly exceed any associated direct or indirect cost increases. Accordingly, it can be said with some degree of confidence that the present carcass grade standards for beef are better than none whatever.

Requirements of an Optimum System

Most interested persons, however, are not satisfied with a grading system that simply meets minimum requirements. They are more interested in the requirements for an optimum system and means by which the system can be moved toward the optimum. The principal criteria of an optimum system are four in number.

1. The standard should separate units of the commodity into groups such that the within-grade variation in quality attributes will have been minimized.
2. The standard should maximize differences in attributes between grades which means that overlapping should be reduced to a minimum.
3. The standard should separate units of the commodity into groups such that the net social gain has been maximized. This means (1) maximizing the difference between costs of grading and the additional value of the graded product to consumers or (2) maximizing any net reduction in marketing costs.
4. The final criterion is that, insofar as possible, the first three should be satisfied simultaneously. In addition, the system must be (1) simple, easily, widely and uniformly understood, (2) fixed and unchanging in a short-term sense and, at the same time, subject to change as warranted by longer-term considerations, and (3) workable in the market place.

Implications of Optimum Criteria

These are a tall order for any grading system. The principal relevance of these criteria is in pointing the way to the kinds of research that are needed, but some considerations are revealed immediately. For instance:

1. Since quality in beef, clearly, is not a single discrete variable, but a complex structure of many variables, the industry must be prepared in any grading systems to accept: (a) some degree of variation within the grades with respect to physical attributes of meat, (2) some overlapping among the grades with respect to each of the various quality attributes.
2. Since value systems of all consumers are not the same and usefulness or value of any particular grade will differ among different uses, (a) an effort should be made to develop neutral grade names and (b) recognition should be given to the fact that the price of meat or livestock in any particular grade need not, purely as a result of grading, bear any particular relation to the price in another grade.
3. The criteria indicate that whatever grading system is developed it inevitably will be a compromise between minimizing quality variation in each grade and the cost and inconvenience of doing so.

4. They suggest that if the present grade standards do, in fact, satisfy the minimum economic requirements, the emphasis, without question, should be on ways and means of improving their usefulness. The criteria also indicate that efforts to broaden or widen a grade to take advantage of a grade name probably will have the effect of increasing the quality variation within that grade and of reducing its usefulness as a guide in buying and selling.

5. The criteria indicate, further, that the proposed dual grading system which would separate variations in quality from variations in cutability represents a step forward—an improvement—*provided* that carcasses can be classified as to cutability accurately and inexpensively. The separation of quality and cutability factors would reduce the unknown variations in physical attributes within each grade that must be considered in buying and selling carcasses. Assuming that official graders can accurately classify carcasses as to cutability, dual grading would improve the usefulness of grading and reduce marketing costs (or increase values) sufficiently to pay for the associated extra cost and inconvenience of grading. The industry apparently is divided on this question.

The research implications are numerous. More information is needed about (1) the physical attributes that are found in meat, and (2) the physical attributes and combinations of attributes which are important to consumers, and among different use categories. On the basis of this and other information, research is needed to delineate or specify quality categories that are both reasonably homogeneous with respect to physical attributes and meaningful to consumers. These categories might be large in number.

At this point it might be possible to combine the aforementioned categories variously into several different alternative sets of standards. Suppose twenty categories were developed that included combinations of attributes that are found readily in meat and which are important to consumers. Suppose, however, that five grades was considered the maximum number for practical workability in the market place. From the twenty categories it would be possible to derive several different sets of grades that might be considered within the range of practicability. The problem then would be to determine which set should be selected and not, as has been done in some research, to determine which grade of the existing set receives the most preference votes from consumers. That set

would be selected which (1) minimized the within-grade variation in attributes, and (2) maximized the total acceptability or value to consumers, not of one grade, but of all grades, that is, the total population of the product. This, then, it seems, is the ultimate objective and role of grades — i.e., to increase and maximize the net revenue received by producers from the sale of all categories of the product. This would be accomplished by selecting the standard that (1) minimized marketing costs and thereby increased the total consumption of the product, or (2) increased the prices consumers were ready and willing to pay without reducing their consumption, or (3) had some combination of these effects.

All of this research, of course, could not be accomplished quickly and easily. The research will constitute a tortuous process requiring many years. In the meantime, it will be necessary to proceed, as before, on the basis of assumptions and the best logic and information available.

Table 1.—Monthly and Season Average[1] Prices Received by Farmers for Oklahoma Farm Products. (Dollars)

	Wheat	Corn	Oats	Barley	Rye	Grain Sorghum	All hay	Alfalfa hay	Wild hay	Cotton-lint	Cotton-seed	Soy-beans	Peanuts
1958	1.75	1.10	.59	.81	.90	1.66	15.50	18.69	12.97	.314	41.40	1.89	.105
1959**	1.75	1.09	.63	.75	.90	1.55	17.00	23.47	14.37	.289	37.70	1.85	.096
Nov.	1.83	1.05	.68	.81	.95	1.50	18.20	22.50	14.00	.280	38.00	1.84	.095
Dec.	1.83	1.05	.69	.82	.94	1.52	20.20	25.80	15.60	.267	38.00	1.85	.095
1960 Jan.	1.83	1.10	.72	.83	.97	1.56	20.20	25.80	15.20	.271	38.00	1.85	.090
Feb.	1.87	1.13	.72	.83	1.00	1.58	21.30	27.00	16.30	.265	38.00	1.83	.090
Mar	1.92	1.13	.72	.83	.99	1.59	24.90	31.00	19.00	.267	38.00	1.83	.090
Apr.	1.91	1.18	.70	.82	.98	1.61	23.50	28.80	18.60	.250	-- --	1.90	.090
May	1.81	1.16	.69	.78	.97	1.58	19.20	22.40	16.00	.284	-- --	1.86	---
June	1.68	1.18	.62	.72	.89	1.56	17.60	21.30	14.00	.300	-- --	1.81	---
July	1.69	1.18	.62	.69	.87	1.57	18.20	22.10	14.60	---	-- --	1.83	---
Aug.	1.72	1.19	.65	.72	.88	1.49	18.60	23.00	14.60	---	-- --	1.82	---
Sep.	1.78	1.05	.65	.73	.95	1.40	19.40	23.80	15.50	.311	40.00	1.80	.098
Oct.	1.78	1.03	.65	.73	.95	1.38	19.90	24.00	16.30	.296	40.00	1.79	.100
Nov.	1.79	1.04	.65	.74	.91	1.38	20.60	25.30	16.50	.279	41.00	1.82	.100

	Cattle	Calves	Sheep	Lambs	Hogs	Wholesale milk	Butter-fat	All chickens	Commercial broilers	Eggs	Turkeys	Wool	Alfalfa seed	Sweet Potatoes
1958	21.50	25.50	7.80	21.00	19.60	4.65	.52	.164	.179	.328	.222	.28	19.00	2.35
1959**	22.20	26.90	7.00	19.20	14.20	4.58	.53	.132	.151	.272	.234	.34	21.00	2.30
Nov.	19.20	24.20	6.50	17.00	12.20	4.75	.56	.119	.145	.314	.240	.37*	19.40	2.30
Dec.	18.50	23.00	6.60	16.30	11.60	4.80	.55	.128	.165	.324	.270	.34	19.10	2.20
1960 Jan.	19.10	23.20	6.70	16.80	11.60	4.80	.53	.144	.155	.285	.240	.32*	19.30	2.50
Feb.	19.70	24.00	7.50	17.50	12.30	4.80	.53	.145	.155	.261	.240	.32*	19.80	2.50
Mar.	20.80	24.40	8.00	19.50	14.00	4.85	.53	.157	.165	.270	.240	.34	20.30	2.50
Apr.	20.60	24.90	7.50	20.00	14.60	4.35*	.53	.140	.165	.281	.230	.38	20.30	---
May	20.40	24.50	7.00	20.70	14.60	4.10	.53	.142	.165	.276	.240	.38	20.50	---
June	19.80	23.50	6.50	21.00	15.30	4.25	.53	.142	.160	.267	.220	.38	-- --	---
July	19.00	22.50	6.50	18.50	16.00	4.30	.53	.151	.170	.256	.220	.38	-- --	---
Aug.	17.70	20.90	6.50	16.70	16.30	4.35*	.53	.136	.160	.282	.220	.36	22.60	2.75
Sep.	17.30	20.50	6.40	16.30	15.40	4.55	.54	.134	.160	.327	.230	.36	23.50	2.35
Oct.	17.00	20.50	6.40	16.30	16.40	4.75	.55	.140	.159	.394	.240	.34	23.60	2.55
Nov.	17.50	21.50	6.20	16.30	16.30	4.95**	.55	.132	.160	.433	.25	.34	23.50	2.60

SOURCE: *Prices Received by Farmers*, Agricultural Marketing Service, U.S.D.A., Oklahoma City, Oklahoma, Monthly Releases or *Agricultural Prices*, A.M.S., U.S.D.A., Washington, D. C.

[1] Annual prices for crops are season average prices for the crop year weighted by marketings. Annual prices for livestock and products are season average prices for the calendar year weighted by marketings.

* Revised ** Preliminary

Table 2.—Index Numbers of Prices Received by Farmers for Oklahoma Farm Products.[1]
(Percent of 1910-14 Average)

		Wheat	Corn	Oats	Barley	Rye	Grain sorghums	All Hay	Cotton-lint	Cotton-seed	Sweet Potatoes
1958		215	180	135	128	109	143	183	228	247	229***
1959		208	175	143	136	109	142	192	248	207	200***
	Nov.	212	162	152	135	110	125	206	247	194	187
	Dec.	212	162	154	137	109	126	229	236	194	179
1960	Jan.	212	169	161	139	113	130	229	239	194	203
	Feb.	217	174	161	139	116	131	241	234	194	203
	Mar.	223	174	161	139	115	132	282	236	194	203
	Apr.	222	182	157	137	114	134	266	221	194	---
	May	210	178	154	130	113	131	218	251	194	---
	June	195	182	139	120	103	130	200	265	194	---
	July	196	182	139	115	101	131	206	265	194	---
	Aug.	200	183	145	120	102	124	211	265	194	223
	Sep.	206	162	145	122	110	116	220	275	204	191
	Oct.	206	158	145	122	110	115	226	261	204	207
	Nov.	208	160	145	124	106	115	234	246	210	211

		Cattle	Calves	Sheep	Lambs	Hogs	Wholesale milk	Butterfat	All chickens	Eggs	Wool
1958		445	423	169	358	281	242	223	176	185	180
1959		460	458	150	322	203	238	226	142	155	191
	Nov.	398	405	141	293	173	247	239	127	176	198
	Dec.	383	385	143	281	165	249	235	136	182	198
1960	Jan.	395	389	145	289	165	249	226	153	160	204
	Feb.	408	402	162	301	175	249	226	154	147	198
	Mar.	431	409	173	336	199	252	226	167	152	198
	Apr.	427	417	162	344	207	226*	226	149	158	221
	May	422	410	152	356	207	213	226	151	155	221
	June	410	394	141	361	217	221	226	151	150	221
	July	393	377	141	318	227	223	226	161	144	221
	Aug.	366	350	141	287	232	226*	226	145	158	210
	Sep.	358	343	139	281	219	236	231	143	184	210
	Oct.	352	343	139	281	233	247	235	149	221	198
	Nov.	362	360	134	281	232	257**	235	141	243	198

SOURCE: Annual data are averages of months for calendar years and are compiled by Dept. of Ag. Econ., Oklahoma State University, from data supplied by Agricultural Marketing Service, U.S.D.A., Oklahoma City, Oklahoma, and Washington, D. C. For previous years, see Oklahoma Agri. Exp. Sta. Publication P-297, Prices Received by Oklahoma Farmers, 1910-1957.

[1] For the index of purchasing power of a unit of an individual commodity in terms of commodities used in farm production and family living, interest, taxes and wage rates, divide the index of price received by Oklahoma farmers (in this table) by the index prices paid by United States farmers in Table 4 for the same month and multiply by 100.

* Revised ** Data not available *** 9 months average

Table 3.—Price Indexes of Groups of Oklahoma Farm Products.
(Percent of 1910-14 Average)

		All farm products	All crops	Feed grains	Feed grains and hay	Cotton and cottonseed	Oil bearing crops	All livestock & L.S. Prod.	Meat animals	Dairy products	Poultry and poultry prod.
1958		271	220	159	172	230	283	327	401	256	187
1959		267	219	158	174	243	262	320	400	254	157
	Nov.	255	220	150	174	240	247	293	347	264	170
	Dec.	251	219	150	182	230	247	286	333	265	178
1960	Jan.	252	220	156	187	233	238	288	341	263	164
	Feb.	256	222	159	193	229	238	293	353	261	153
	Mar.	265	228	159	207	230	238	306	373	263	160
	Apr.	262	224	162	203	217	238	303*	374	247*	160
	May	259	221	159	184	244	247	300	370	240	159
	June	252	213	156	176	256	238	295	362	245	155
	July	249	214	156	179	256	238	288	351	246	152
	Aug.	246*	216	156	180	256	238	278*	331	247	159
	Sept.	249	223	145	175	266	256	278	322	256	179
	Oct.	252	221	143	176	254	260	285	321	264	209
	Nov.	255	219	144	179	241	262	294	330	270	224

Purchasing Power Indexes of Groups of Oklahoma Farm Products[1]
(Percent of 1910-14 Average)

		All farm products	All crops	Food grains	Feed grains	Feed grains and hay	Cotton and cottonseed	Oil bearing crops	All livestock & L.S. prod.	Meat animals	Dairy products	Pltry. and pltry. prod.
1958		92	75	73	54	59	78	96	111	137	87	64
1959		90	74	70	53	59	82	88	107	134	86	53
	Nov.	86	74	71	51	59	81	83	99	117	89	57
	Dec.	85	74	71	51	61	77	83	96	112	89	60
1960	Jan.	84	74	71	52	63	78	80	96	114	88	55
	Feb.	86	74	73	53	65	77	80	98	118	87	51
	Mar.	88	76	74	53	69	77	79	102	124	88	53
	Apr.	87	74	74	54	67	72	79	100*	124	82*	53
	May	86	73	70	53	61	81	82	100	123	80	53
	June	84	71	65	52	59	86	80	99	121	82	52
	July	84	72	66	52	60	86	80	97	118	83	51
	Aug.	83	72	67	52	60	86	80	93	111	83	53
	Sept.	84	75	69	49	59	89	86	93	108	86	60
	Oct.	85	74	69	48	59	86	88	96	108	89	70
	Nov.	86	74	70	48	60	81	88	99	111	91**	75

SOURCE: Compiled by Dept. of Ag. Econ., Oklahoma State University, from data supplied by Agricultural Marketing Service, U.S.D.A., Oklahoma City, Oklahoma, and Washington, D. C. For previous years, see Oklahoma Agri. Exp. Sta. Publication P-297, Prices Received by Oklahoma Farmers, 1910-1957.

[1] The ratio of prices received by farmers to prices paid by farmers for commodities used in farm living and production, interest, taxes and wage rates. For individual commodities, see footnote 1 of Table 2.

* Revised. ** Preliminary.

Table 4.—Index Numbers in the United States, Index of Demand Deposits in Oklahoma, and Oklahoma Price Ratios.

		United States index numbers of:					Oklahoma price ratios[4]			
		Prices received by farmers (1910-14=100)	Prices paid by farmers (1910-14=100)	Wholesale prices (1910-14=100)	Industrial manufacturing payrolls[1] (1947-49=100)	Index of demand deposits in Oklahoma[2 3] (1923-25=100)	Hog corn	Egg feed	Turkey feed	Milk feed
1955		232	276	249	152.9	291.3	11.4	9.5	7.4	1.622
1956		230	278	256	161.4	297.4	10.4	9.7	7.2	1.695
1957		235	286	264	162.7	290.9	13.6	9.2	6.7	1.757
1958		250	293	268	148.7	313.0	16.9	10.2	6.9	1.968
1959		240	298	268	167.0	334.5	12.6	8.7	6.9	1.877
	Nov.	231	296*	267	166.8	339.4	11.6	10.1	7.7	1.971
	Dec.	230	297	267	175.4	329.2	11.0	10.5	8.7	1.976
1960	Jan.	232	299	267	175.5	335.4	10.5	9.1	7.6	1.925
	Feb.	233	299	267	173.9	323.1	10.9	8.2	7.6	1.912
	Mar.	241	300	270	172.6	319.1	12.4	8.5	7.6	1.928
	Apr.	242	302	270	168.8	318.8	12.4	8.8	7.2	1.694
	May	241	301	270	171.5	293.6	12.6	8.8	7.7	1.661
	June	236	299	270	172.5	321.4	13.0	8.7	7.2	1.765
	July	238	298	270	169.2	334.7	13.6	8.4	7.2	1.808
	Aug.	234	298	267	169.2	331.5	13.7	9.2	7.2	1.773
	Sept.	237	298	267	172.0	327.1	14.7	10.8	7.6	1.948
	Oct.	240	297	270	171.2**	328.1	15.9	13.1	8.0	2.047
	Nov.	241	297	270	----	----	15.7	14.4	8.3	2.101**

SOURCE: Indexes of U. S. prices received and prices paid by farmers and indexes of U. S. wholesale prices, from *Agricultural Prices*, A.M.S., U.S.D.A., Washington, D. C. Indexes of demand deposits in Oklahoma, calculated by Dept. Agri. Econ., Okla. Agri. Exp. Sta. from data furnished by Federal Reserve Board, Washington, D. C. Indexes of industrial manufacturing payrolls, from U. S. Department of Labor, Bureau of Labor Statistics, Washington, D. C.

[1] Unadjusted for seasonal variation.

[2] Demand deposits of Oklahoma member banks of the Federal Reserve System located in places under 15,000 population.

[3] Index numbers based on net demand deposits prior to 1936 and upon gross demand deposits since that date. For a discussion of this index see CURRENT FARM ECONOMICS, Oklahoma Agricultural Experiment Station Series 49, Vol. 13, Nos. 1 and 2. Feb.-Apr., 1940. p. 41.

[4] The number of bushels of corn or pounds of feed which one unit of the commodity (100 pounds of hogs, one dozen eggs, one pound of turkeys or milk) will purchase. Prices used are the official A.M.S. estimates of prices received by Oklahoma farmers except for commercial feeds or ingredients which are official A.M.S. estimates of prices paid by Oklahoma farmers. These ratios are computed on the basis of fixed rations and are not directly comparable with ratios computed from other rations. The composition of each ration used is available upon request.

* Revised. ** Preliminary.

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